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vol.35

no.11-12

vol.36

no.1-12



Spring



Summer

at any season
an
appropriate
gift



Autumn



Winter

Yosemite

Nature Notes

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YOSEMITTE NATURE NOTES

VOLUME XXXVI - NUMBER 7

VOUGHT COLLECTION
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JULY 1957



—Fiske



1933



1956

PLATE 1

CORRECTIONS: Photo credits for June were overlooked. The cover is by Ralph Anderson pages 51, 59 & 60 by Ansel Adams, page 56 by Robert Carpenter. The size of the puffball was 52 inches in circumference not diameter.

Yosemite Nature Notes

THE MONTHLY PUBLICATION OF

THE YOSEMITE NATURALIST DIVISION AND
THE YOSEMITE NATURAL HISTORY ASSOCIATION, INC.

John C. Preston, Superintendent

D. Gallison, Assoc. Park Naturalist

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W. E. Bullard, Asst. Park Naturalist

OL. XXXVI

JULY 1957

NO. 7

HOW LONG BEFORE A FALLEN LOG DISAPPEARS?

By Neva Snell

Photographs by the Author

Studies have been in progress since the summer of 1953 on research plots originally laid out and examined intensively, beginning in 1933, by Yosemite Field School classes. These plots are in a rarely visited area north of Yosemite Valley, at 8000 to 9200 feet elevation, within a few miles of White Wolf. We found no evidence that anyone had been in the immediate area since the previous studies were made. Hence changes in the plots are essentially uninfluenced by human intervention, and may be regarded as natural. Interesting findings from these studies include examples of the very slow disintegration of fallen trees, as illustrated by the accompanying photos.

The log lying on granite (Plate 1, 1933 and 1956) has crumbled noticeably, and the left end has slipped down behind the rock. However, these changes seem surprisingly small for the twenty-three year interval. Of interest also are the small lodgepole pine growing behind the log and the clumps of grass, on which time has left little mark. The larch which was being photographed by Joseph Dixon in 1933 and the tall red fir at the right have been less fortunate.

The fallen log in Plate 2 is supported, off the ground, by rocks. It succeeded in keeping its tip off the ground, with only a slight sag developing between 1935 and 1955. Probably its change would have been correspondingly slow for many more years had not a falling tree forced its tip down during the winter of 1955-56. The red fir behind the log and the two lodgepole pines at the extreme left provide examples of twenty-year tree growth.

The bark of the fallen red fir in Plate 3 had retained its typical red color, and appeared well preserved at the time of the 1955 photo. Unfortunately we do not have an early picture of this tree, but it was described as dead when first studied in 1933. The main trunk was still standing in the summer of 1954, although much of the top had broken off. The trunk fell the following winter.

The dead trees discussed above were in dry rocky locations. Undoubtedly such an environment favors preservation of wood. As might be expected, logs on a pond plot appear to be decaying more rapidly. This is particularly apparent for the log suspended above the pond in 1935 (Plate 4). But twenty

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1935



1955



1956

PLATE 2

years have failed to obliterate one which was already partly submerged in 1935 (almost paralleling the opposite bank in Plate 4 photo). On this plot small stakes, probably of lodgepole pine, were driven at 10-foot intervals in 1934. These were still in place after twenty years along the very boggy east boundary. Conditions on much of this plot are probably too wet to favor decay unless wood is suspended above the water. Too much moisture reduces the available oxygen within wood, and organisms which cause decay require an adequate supply of oxygen as well as moisture.

approximately a half mile long area, in which very thick red fir forests prevailed, with lodgepole pine in the vicinity of meadows.

Due to this unusually heavy fall of timber, several research plots in the area changed more in the winter of 1955-56 than during the entire preceding twenty years. If the plots had not been observed yearly for several summers, we would have assumed that this down timber had accumulated gradually. The photos in Plate 5, taken on one of the plots in 1935, 1955, and 1956 illustrate the few fallen trees after the twenty year interval as compared with the maze



1955

PLATE 3

As these studies progress, much more data concerning the rate of disintegration of fallen logs in various environments will be obtained. The winter of 1955-56 was particularly fruitful in providing material for these studies. Last summer an unusually large number of fallen trees were observed in the vicinity of the plots. Many of these were tremendous red firs, apparently healthy before falling. Generally they were uprooted, not broken off. Direction of fall appeared random. These observations were made over

of down timber one year later. The trees in these photos are principally lodgepole pine. A portion of this same plot is seen from a different direction in Plate 6 (1954 and 1956). Although these photos represent a two-year period, the new fall present in 1956 is known to have occurred during the preceding winter. Many other photos were taken of this freshly fallen timber, for comparisons in future studies.

The group participating in these studies have been repeatedly reminded of the enduring qualities of

nature. At the time of our first twenty year re-examination of the area a Field School alumnus was heard to remark that the principal changes appeared to be in the personnel.

Judging by the data thus far available, the title question of this article will depend upon another generation for an answer.



1935



1956

PLATE 4



1935



1955



1956

PLATE 5



1954



1956

PLATE 6

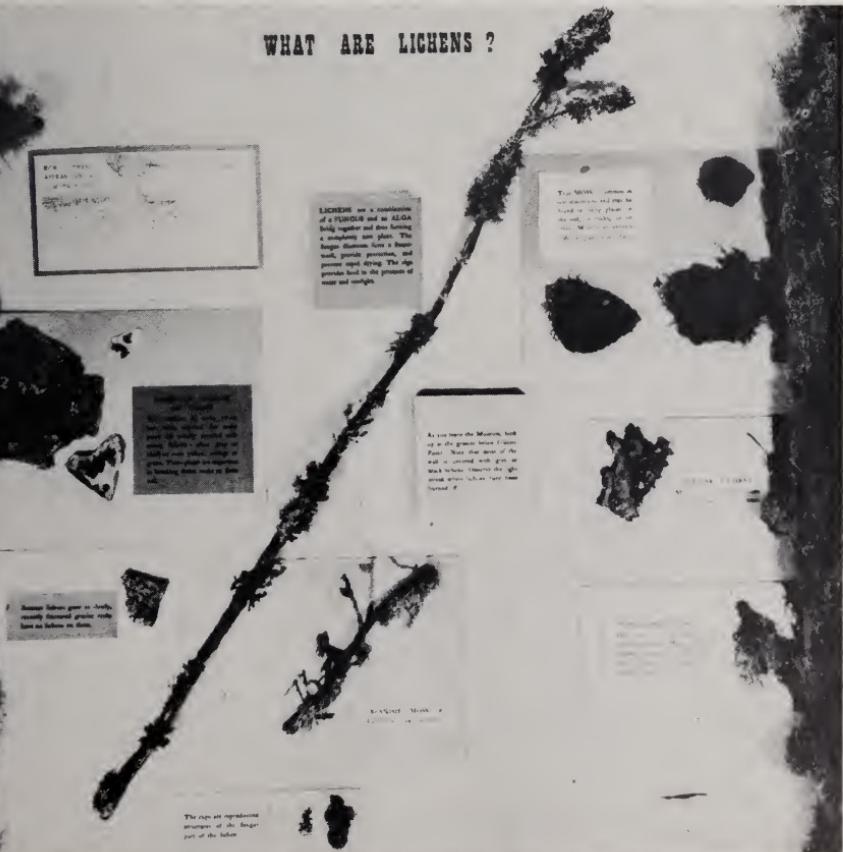
WHAT ARE LICHENS?

By Robert J. Rodin, Ranger-Naturalist

"WHAT ARE LICHENS?" is the title of a new exhibit added to the Yosemite Museum during the summer of 1956. Lichens are not flowering plants and thus do not attract many people to study or understand them. They are indeed a strange group of plants since they do not belong in any specific plant phylum, neither fish nor fowl within the plant kingdom as it were. They are not plants that should be ignored, however, as they are important for several reasons.

If you are not familiar with lichens as a group perhaps this introduction to them will help you to understand more about them. First they are plants which are composed of a fungus and an alga species, living intimately so as to form a completely new plant. Each type or species of lichen represents a different combination of fungi and algae. The fungus part of the lichen provides a framework or structure of the plant, composed of many interwoven microscopic filaments. The fungus provides protection for the alga, and to

WHAT ARE LICHENS?



—W. C. Bullard

some extent conserves water in the body of the lichen. The alga is usually a one-celled green or blue-green type, with very simple reproduction. It is scattered throughout the filaments of the fungus. In the season when moisture is present the alga manufactures food in the presence of sunlight; enough food for itself and for the fungus, for the fungus is parasitic upon the alga.

Cups eventually form on lichens. These cups are the reproductive structures of the fungus part of the plant and produce spores. The alga has no comparable reproduction.

These lichens take on many forms. They occasionally are so small that many people are not aware that most of the rocks in our Sierra Nevada Mountains which have been exposed for years are usually covered with lichens. Some of these crustose lichens (or crusty lichens) are found on rocks all over the world. Some of the so-called moss is actually a lichen. "Spanish Moss" in California is a pendulant lichen, usually found growing on oak trees in this area, and perhaps more luxuriant in coastal areas. The chartreuse-colored "moss", frequently on the north side of trees and often covering the living or dead branches of incense-cedar and other conifers, is also a lichen. In her book *Outdoor Hazards, Real and Fancied*, Mary V. Hood has discussed these in considerable detail.

There is in addition to the crustose, the effect or pendulant forms another form — the leafy lichens. These are common in Yosemite also. Any of these forms may be found on rocks, on soil, or on trees. In no case do they take nourishment from the trees. They are considered to be epiphytes and simply live on the outside of them.

Perhaps the reader is wondering how in heaven these lowly plants could be considered important. There are two points that should be considered. First, there is good evidence that these plants which form crusts on most of our rocks are responsible for a certain amount of weathering of rock. They apparently form in their bodies a very weak acid — carbonic acid — which is an important factor in soil formation from rocks. Secondly, they are pioneers in a whole series of stages of plant succession. The lichens are the first plants to grow on rocks. They are followed by mosses, then later by grasses and annual flowers, and eventually shrubs and trees. This phase of lichen study is of special interest to the ecologist as he observes that all is not completely stable in nature, but rather that changes do occur, and lichens are the plants which pioneer this series.

Next time you are in the Yosemite Museum look at the lichen exhibit on the mezzanine floor.

EDITOR'S NOTE: This attractive exhibit was the idea and handiwork of the author, Dr. Robert J. Rodin, who is an instructor at California State Polytechnic College, San Luis Obispo, California.



A NEW INDIAN VILLAGE SITE

By Gerald Robinson, Ranger-Naturalist

Many old Indian village sites have been found in the Wawona area. One of the latest of these finds was made last year by some campers from the Wawona Campground. Once there were many similar areas near this site which looked suitable for village sites, and the area is not usually reached by visitors, it seemed that sites which had not yet been discovered might be located in the same general area.

One afternoon, Frank Stoll, a camper, and the author started from the Cunningham Flat section of the Wawona Campground and began working over the ridges above that section.

By looking for areas similar to the one found last year (rather flat areas on top of a ridge with several large black oaks in the vicinity), we soon found a mortar rock about 75 yards

farther up the same ridge. This rock was almost square. It was 9 feet on a side and contained 12 mortar holes from a fraction of an inch to 3 inches in depth. The top part of the rock that was exposed was only a few inches wide but the side jutted some 4 feet out of the ground. All of the holes were covered with 3 to 8 inches of soil, some of which appeared to be mineral soil.

One mortar hole was especially interesting. It was located on a shelf of rock somewhat above the others. The rest of this shelf was loose and came off when the rock was being cleaned. Only the section of the shelf with the mortar hole remained in place.

Finding a village site like this certainly gives one a strange feeling. Looking about it is hard to realize that people could make a living from the materials at hand.



Mortar holes similar to these were found at the site.

EDITORS NOTE: Knowledge of the Indians of the Yosemite region is quite limited. Anyone knowing of or finding village sites is requested to report them to the Yosemite Museum.



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AUGUST 1957



High Sierra Meadow

—C. A. Harwell

